

# **Notice of Allowability**

**Application No.**

10/717,203

**Examiner**

Dac V. Ha

**Applicant(s)**

FELTER, STEFAN

**Art Unit**

2611

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 06/19/07.
2. ☒ The allowed claim(s) is/are 11, 2-9, 12-16, 29, 22-27, 30-34, renumbered as 1-26, respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## **Attachment(s)**

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| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____</li> </ol> |
|--|--|

Dac V. Ha  
 Primary Examiner  
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### DETAILED ACTION

1. This office action is in response to the amendment filed on 06/19/07.

#### ***Allowable Subject Matter***

2. Claims 11, 2-9, 12-16, 29, 22-27, 30-34, renumbered as 1-26, respectively, are allowed.
3. The following is a statement of reasons for the indication of allowable subject matter:

Applicant has amended the claims in accordance with the office action dated 03/19/07. Upon further consideration and comparison with prior art of record (closest reference, Jitsukawa et al. – US 2003/0012267), amended claims 11, 2-9, 12-16, 29, 22-27, 30-34 are allowed. Particularly, prior art of record, taking individually or collectively, fails to fairly teaching a method and apparatus for determining a channel estimate including specific claimed subject matter:

“wherein in performing the calculation the correlator considers a dimensional receptivity vector formed from the antenna signal matrix with respect to a sampling window time index for the plural antennas of the antenna array, the dimensional receptivity vector having a frequency related to a difference between phase components of complex values of the dimensional receptivity vector, there being plural possible frequencies for the dimensional receptivity, the plural possible frequencies being represented by a frequency index; and wherein for each combination of plural possible frequencies and plural time indexes, the correlator calculates:

$$Y(n,t) = \text{FFT}(n,X(:,t)) \text{ wherein } t \text{ is the sampling window time index;}$$

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$X(:,t)$  is the complex antenna matrix, with  $:$  representing all antenna indexes for one sampling window time index;

$n$  is the frequency index", as claimed in independent claims 11 and 29 (claims 2-9, 12-16, 22-27, 30-34 depend therefrom. Thus, claims 11, 2-9, 12-16, 29, 22-27, 30-34 are found to be novel and unobvious over prior art of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dac V. Ha whose telephone number is 571-272-3040. The examiner can normally be reached on 4/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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A handwritten signature in black ink, appearing to read "D. Ha", with a long horizontal line extending from the end of the signature.

Dac V. Ha  
Primary Examiner  
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